



January 9, 2019

Dr. Walter G. Copan, Director
Dr. Courtney Silverthorn, Deputy Director, Technology Partnerships Office

National Institute of Standards and Technology
100 Bureau Drive MS 2201
Gaithersburg, MD 20899

RE: Comments to Special Publication (NIST SP) – 1234, *Return on Investment Initiative for Unleashing American Innovation*

Dear Drs. Copan and Silverthorn:

Please accept the attached comments on the above report submitted by Jefferson Science Associates, LLC (Management and Operating Contractor for the Thomas Jefferson National Accelerator Facility) and the Southeastern Universities Research Association, Inc.

We can be reached at drew@jlab.org, rmoy@sura.org, or 202-657-6202 if you require additional information.

Sincerely,

A handwritten signature in black ink, reading 'Andrew Weisenberger'.

Andrew G. Weisenberger, Ph.D.
Chief Technology Officer
Thomas Jefferson National Accelerator Facility

A handwritten signature in blue ink, reading 'Russell Moy'.

Russell Moy, Ph.D., LL.M., P.E.
Counsel, Jefferson Science Associates, LLC
General Counsel, Southeastern Universities
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Managing and Operating the U.S. Department of Energy's



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Comments to:
NIST Special Publication – 1234
Return on Investment Initiative for Unleashing American Innovation

Submitted by:
Russell Moy, Ph.D., LL.M., P.E.¹
Andrew G. Weisenberger, Ph.D.²

Jefferson Science Associates, LLC
and
Southeastern Universities Research Association

Intended Actions 6, 8, and 9

We believe that Intended Action 9 is inconsistent with those of 6 and 8. In particular, Actions 6 and 8 presume efficiency in technology transfer from Federal laboratories by implementing consistent and predictable mechanisms to engage Federal laboratories in collaborative research, a goal that is undermined by Action 9. Our observation, based on decades of experience as the management and operating contractor for a DOE National Laboratory, as a research and engineering collaborator with four NASA centers, and in managing research programs funded by NOAA, NSF, and others, is that the availability of alternative research collaboration methods specific to an agency provide incentives to deviate from a standard.

For example, 15 U.S.C. §3710a authorizes the director of any Federal laboratory at “each Federal agency” to enter into Cooperative Research and Development Agreements and describes intellectual property rights of the collaborating party, the laboratory’s use of royalty payments, the government’s rights, etc. CRADA authority for Government-Owned Government Operated laboratories was granted in 1986 through the Federal Technology Transfer Act (P.L. 99-502); Government-Owned Contractor-Operated laboratories received this authority in 1989 in the National Competitiveness Technology Transfer Act (P.L. 101-189).

We believe the CRADA statute itself specifies good detail for implementation, already addressing a substantial portion of the effort anticipated in Intended Action 6 and that its intellectual property and other provisions fairly balance the interests of the Federal government and collaborating party. Our experience is that the statutory specification of CRADA provisions serves as a standardized template for research collaboration agreements and allows for CRADAs with domestic collaborators to be reviewed and executed in a number of weeks, which is consistent with the experience of USDA

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technology transfer officials with whom we spoke. Our understanding is NASA's Space Act Agreements may require many months to negotiate, particularly when university collaborators are involved, presumably because such agreements are not subject to the Bayh-Dole election of patent rights that nonprofits, universities, and small businesses have come to expect.

While we believe a CRADA should be the preferred instrument for Federal laboratories to engage in most collaborative research activities, particularly when inventions are anticipated, there may be opportunities to expand its flexibility. For example, 15 U.S.C. § 3710a(d)(1) prohibits a Federal laboratory from transferring funds to a non-Federal party to a CRADA. Some collaborative research initiatives may involve a non-Federal participant with unique skills or capabilities where CRADA goals might be more efficiently attained if such funding could be authorized in statute, subject to the appropriate safeguards.

By 2002, the GAO reported³ on the Federal agencies' use of CRADAs:

Table 12: Collaborative Relationship for Research, Development, and Demonstration, Fiscal Year 2001

Agency	Cooperative research and development agreements				Other collaborative relationships	
	Total		Non-traditional		Active ^a	New ^b
	Active ^a	New ^b	Active ^a	New ^b		
Agricultural Research Service	219	49	0	0	Not provided	106
Air Force	320	49	14	5	213	81 ^c
Army	998	235	0	0	0	0
Department of Energy	558	204	0 ^d	0 ^d	Not provided	Not provided
National Aeronautics and Space Administration	1	0	0	0	0	0
National Institutes of Health	420	120	209	76	0	0
National Oceanic and Atmospheric Administration	8	3	0	0	0	0
Navy	317	167	72	46	0	0
U.S. Geological Survey	42	14	7	7	Not provided	Not provided

^aActive as of the end of the fiscal year.

^bExecuted during the fiscal year.

^cFor the Air Force 73 of 81 are Educational Partnership Agreements.

^dDOE officials said that DOE does not enter into non-traditional cooperative research and development agreements.

Source: Agencies cited and U.S. Department of Commerce.

While most of the multi laboratory agencies had been engaged in hundreds of new or active CRADAs, NASA had only one. A decade later, NASA acknowledged "CRADAs have been the typical type of agreement for joint research and technology transfer

³ GAO Report GAO-03-47, Federal Agency Efforts in Transferring and Reporting New Technology, p 80 (2002).

partnerships across the Federal Government.”⁴ The following year, the NASA Advisory Council recommended “that NASA explore expanded use of Cooperative Research and Development Agreements (CRADAs) with its commercial partners.”⁵ We learned through discussions with a NASA official in Fall 2018 that the agency now has two CRADAs to its credit.

Instead of CRADAs, NASA has relied on its ‘other transactions authority’ to engage in research and engineering collaborations. Known as ‘Space Act Agreements’ in NASA parlance, the agency’s organic legislation gives it the authority to “. . . to enter into and perform such contracts, leases, cooperative agreements, **or other transactions** as may be necessary in the conduct of its work and **on such terms as it may deem appropriate**”⁶ The practical implication of Space Act Agreements is that they serve to circumvent the two most important pillars of Federal technology transfer: the Stevenson-Wydler Act, as amended, including the CRADA authority it grants, and the Bayh-Dole Act and its guarantee of patent election rights to nonprofit organizations, small business, and universities collaborating with NASA.

As we indicated in our July 27 letter, our Jefferson Lab colleagues declined a NASA center’s offer to use a Space Act Agreement for a research collaboration because of intellectual property issues, choosing instead to enter in an interagency agreement that we believed offered more fair intellectual property rights to the Department of Energy, Jefferson Lab’s management and operating contractor, Jefferson Lab’s inventor-researchers, and ultimately private industry. We were able to insist on the use of the interagency agreement as the management and operating contractor for a DOE National Laboratory, a negotiating position that would not be available to most other nonprofit organizations, universities, or small businesses seeking to protect their Bayh-Dole rights. We note that the subject inventions of this Jefferson Lab-NASA collaboration have been licensed to a local startup company commercializing novel nanomaterials based, in part, on improvements that will be developed through the use of CRADAs with Jefferson Lab.

The use of Other Transactions arrangements presents additional challenges besides the undermining of Bayh-Dole rights. As the Congressional Research Service reported in 2011:⁷

Evaluating OTs and the use of OT authority is a challenging undertaking. Because the Federal Acquisition Regulation (FAR) and certain procurement statutes do not apply to OTs, the methods or mechanisms used to track contractor performance and results also do not apply. Additionally, the types of activities, functions, and outcomes associated with other transactions cannot be easily measured for the purpose of

⁴ Plan for Accelerating Technology Transfer at NASA, October 31, 2012, available at https://www.nasa.gov/pdf/709314main_NASA_PLAN_FINAL.pdf

⁵ See https://www.nasa.gov/pdf/745979main_13-04_Commercial.pdf

⁶ Now codified at: 51 USC § 20113(e).

⁷ Congressional Research Service, *Other Transaction (OT) Authority*, RL34760, July 15, 2011

evaluation. It does not appear that anyone has yet devised a reliable method for conducting an evaluation that would yield quantifiable, objective data.

Intended Action 9 implies that Other Transactions represent a type of instrument that has been implemented uniformly. As the CRS reports, and a review of the agencies' statutory authorities reveals, implementation across the agencies is anything but uniform. Intended Action 9 proposes the establishment of a similar Research Transaction Authority that is not to be used for a procurement, will protect Bayh-Dole rights, and will be uniformly implemented across the Federal agencies. However, there is no explanation as to why the existing statutory authority at 31 U.S.C. § 6305 and regulatory implementation at 2 C.F.R. Part 200 (the 'Uniform Guidance') would not satisfy these requirements while addressing the evaluation challenges identified by CRS for Other Transactions arrangements.

Appendix 1 of the Green Paper is misleading as it incorrectly indicates a distinction between a Space Act Agreement and Other Transactions Authority. Further, it indicates that OTA authority exists only with DOD and HHS. In fact, OTA also exists for FAA, DOT, DHS, TSA, NIH, DOE, and all other executive agencies under circumstances with OMB approval.⁸ Appendix 1 is also misleading in that it indicates that "work for others" is a standardized instrument for Federal laboratories to engage research collaborators. For example, DOE National Laboratories (16 of which are FFRDCs) do engage in Work for Others (now called 'Strategic Partnership Projects') under statutory authority codified at 42 U.S.C. § 2053. NSF's FFRDCs also perform outside work that is referred to as 'work for others,' without any particular statutory authority (or prohibition) which is not subject to any regulatory guidance and much, if any, agency oversight or approval.

Intended Action 9 proposes the authorization for Federal agencies to establish nonprofit foundations to attract private sector investments in technologies. Before such efforts are initiated, we suggest a thorough review of lessons learned from previous agency attempts of this type, such as In-Q-Tel, Rosettex Technology & Ventures Group, Red Planet Capital, the Army Venture Capital Initiative, and Arsenal Venture Partners. This review should distinguish between the needs of the mission agencies currently hosting such efforts (CIA, DOD, NASA) who are probable customers of the commercialized technologies from those of the research agencies who will not likely be procuring significant amounts of the developed technologies (*e.g.*, DOE Office of Science, NSF).

Intended Action 9 proposes extended use of ACT authority at GOCO laboratories. An initiative of the DOE, ACT authority is a variation of the Work for Others authorized in the Atomic Energy Act and codified at 42 U.S.C. § 2053. ACT represents little, if any concession from the Federal government and allows the management and operating contractor to assume the risks normally borne by the non-Federal partner. FFRDCs are prohibited from "quantity production or manufacturing"⁹ and most of the DOE, NSF,

⁸ Congressional Research Service, *Other Transaction (OT) Authority*, RL34760, July 15, 2011.

⁹ 48 C.F.R. § 35.017-2(i).

DOD, and NASA FFRDCs are operated by nonprofit entities. These nonprofit contractors are not likely to manufacture developed technologies and may not be in a position to assume such risk (including the advance funding requirement), notwithstanding the enhanced fees that might be collected under this arrangement. The ability for the government to assume the risk otherwise borne by the management and operating contractor to an ACT is undoubtedly limited by the Antideficiency Act, including the provisions codified at 31 U.S.C § 1341.

Intended Action 8 proposes the use of standardized indemnification language, disclaiming liability other than the sovereign immunity waived under the Federal Tort Claims Act. We note that 26 Federal laboratories are FFRDCs and operated by private entities, many of whom are nonprofit organizations or universities that cannot claim sovereign immunity.¹⁰ It is not clear how such standardized indemnification language could be applied in this circumstance, particularly when some of the largest Federal laboratories are FFRDCs.

Intended Action 3

Federal law and policy requires utilization of Federal R&D resources in a manner that benefits the U.S. economy and this provision is most often implemented as a preference for U.S. manufacture of subject technologies. The Department of Energy will accept a ‘Net Benefits Statement’ as an alternative when government funds are not provided to the non-Federal collaborator. The agency has considerable experience with the use of the Net Benefits Statements in CRADAs, which is documented in DOE Order 483.1B (2016).¹¹ The Green Paper suggested the use of waivers, but this may be more burdensome because of a potential requirement to show U.S. manufacture is not feasible, in addition to the articulation of alternative benefits to the U.S.

We believe the use of CRADAs with an option to use an agency-approved Net Benefits Statement will promote the U.S. economy while providing flexibility in technology collaborations between Federal laboratories and industry.

Intended Action 7

We agree a present assignment of inventions by Federal employee-inventors should be required, provided such assignment satisfies the criteria described in *Stanford University v. Roche Molecular Systems, Inc.*, 563 U.S. 776. We note that the U.S. Department of Justice published an exhaustive four-year, three-volume study describing technology

¹⁰ <https://www.nsf.gov/statistics/ffrdclist/#activity>

¹¹ Available at: <https://www.directives.doe.gov/directives-documents/400-series/0483.1-BOrder-B/@@images/file>

transfer issues when Federal employee-inventors do not assign inventions to the government.¹²

Intended Action 10

We agree that Federal R&D funding provided under procurement contracts, grants, and cooperative agreements should be allowable for technology transfer activities and further, that patent prosecution and maintenance costs be explicitly allowable for those funding recipients electing to assert Bayh-Dole rights.

Intended Action 10 proposes technology maturation funding in collaboration with the Small Business Administration. We recommend the inclusion of National or other Federal Laboratories operated by nonprofit organizations as these entities are excluded from the jurisdiction of the SBA.

Intended Action 14

Intended Action 14 proposes the establishment of a U.S. Government-wide database on technology transfer. Such efforts should include a review of lessons learned from existing technology transfer databases from NASA, DOE, OSTI, etc., including an analysis of the actual effectiveness of the government in establishing those ‘B2B’ portals. University technology transfer offices should be queried as to the most effective media for the transfer of their technologies.

Consideration should be given to private sector operators of such a database, similarly to the outsourcing of ‘USAJOBS.’ One such private sector B2B technology consolidator used by universities and other nonprofit organizations is the iBridge.Network.¹³ This effort could also benefit from case study analyses of firms such as Research Corporation Technologies¹⁴ which has participated in the commercialization of a number of lucrative university inventions and Intellectual Ventures.¹⁵

¹² U.S. Department of Justice, *Investigation of Government Patent Practices and Policies, Report and Recommendations of the Attorney General to the President* (1947).

¹³ <https://www.ibridgenetwork.org>

¹⁴ <https://rctech.com/>

¹⁵ <https://www.intellectualventures.com/>